UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Forest Insect and Disease Management
P.O. Box 5895, Asheville, N.C. 28803

June 22, 1976
5240

Mr. Michael C. Remion
South Carolina State Commission of Forestry
P. O. Box 21707
5500 Broad River Road
Columbia, S. C. 29221

Dear Mike:

At the request of the South Carolina Commission of Forestry, Larry R. Barber and Iral Ragenovich traveled to Burnt Gin Seed Orchard near Sumter, S. C. on June 1-2, 1976. The objective of the visit was to determine if state seed orchard personnel were attaining adequate spray coverage with their Guthion(R) treatments for seed and cone insects.

METHODS

Approximately 50 slash pine (Pinus elliotti, Engelm var elliottii L.) were sprayed with solutions of 1/2 and 1 pound (liquid wt) of Rhodamine Bx dye in 100 gallons of water plus Triton(R) B-1956 spreader-sticker. The red dye solution was used as a simulated application of Guthion(R) to show how the spray was deposited on the foilage and cones.

Rhodamine Bx not only has a red color, but also glows when activated by ultra violet light. Sprayed trees were checked both during the day and at night with ultra violet light to determine coverage. The treatment was applied in the normal operational manner used by the seed orchard manager, by making one pass by the trees and spraying only one side. Both a straight stream and a mist application were used.

RESULTS AND DISCUSSION

In the past, seed orchard personnel had been spraying only one side of the tree expecting the spray drift to give satisfactory coverage to the conelets and cones on both sides of the tree. Orchard personnel had often used a straight stream to drench the tree to the point of run off.

Examination of conelets and cones showed that a mist application gave better coverage than a straight stream. In addition spraying only one side of the tree gave unsatisfactory spray coverage on the opposite side.

Coverage on the needles was often better than on the cones or conelets. It is not known why this occurred or if this would occur if Guthion(R) was used instead of a dye. This needs to be investigated further.

One pound of Rhodamine Bx in 100 gallons of water was easier to see than 1/2 pound in 100 gallons of water.

CONCLUSION AND RECOMMENDATION

We recommend that in future spray applications, personnel of the Burnt Gin Seed Orchard spray both sides of their trees with a mist to get maximum spray coverage. In addition, spray tests should be made using a dye and Guthion(R) to determine if the actual spray treatments are getting coverage and if the spray is sticking to the conelets and cones.

Larry Barber at the Asheville Field Office is presently working on a method of applying dye through a spray system and recording spray coverage and droplet size on paper spray cards. We have also purchased a new dye which should be easier to see under ultra violet light. After development of the dye technique, Larry Barber will contact the South Carolina Commission of Forestry to again evaluate the seed orchard spray methods.

Larry R Barber

LARRY R. BARBER
Entomologist